

(12) **UK Patent Application** (19) **GB** (11) **2 198 923 A**
 (43) Application published 29 Jun 1988

(21) Application No 8630461

(22) Date of filing 19 Dec 1986

(71) Applicant
 The Secretary of State for Defence
 (Incorporated in United Kingdom)
 Whitehall, London, SW1A 2HB

(72) Inventor
 Peter Frederick Hardy

(74) Agent and/or Address for Service
 P B Lockwood
 Procurement Executive, Ministry of Defence,
 Patents 1A4, Room 2014, Empress State Building,
 Lillie Road, London, SW6 1TR

(51) INT CL⁴
 A43B 7/36 3/18 A43C 13/12 15/02

(52) Domestic classification (Edition J):
 A3B 8B3 8F2

(56) Documents cited
 GB A 2103069 GB 0523644 EP A1 0079572
 US 3827166

(58) Field of search
 A3B
 Selected US specifications from IPC sub-classes
 A43B A43C

(54) Overshoe

(57) An overshoe comprises a sole part (1) with straps (3, 5, 7) attached and provided with a draw-string (11) so that in use they may be drawn up and over the shoe to which the overshoe is to be attached. In one embodiment the overshoe is formed from an electrically conductive material, one of the straps (7) being extended into a tongue which, in use, is tucked into the wearer's shoe so as to provide an electrical connection between the wearer's body and the electrically conducting sole part (1). The overshoe of the invention may also be used to provide an electrically insulating overshoe, or to provide a slip resistance by having spikes or a tread pattern or a non-slip substance applied to the sole.

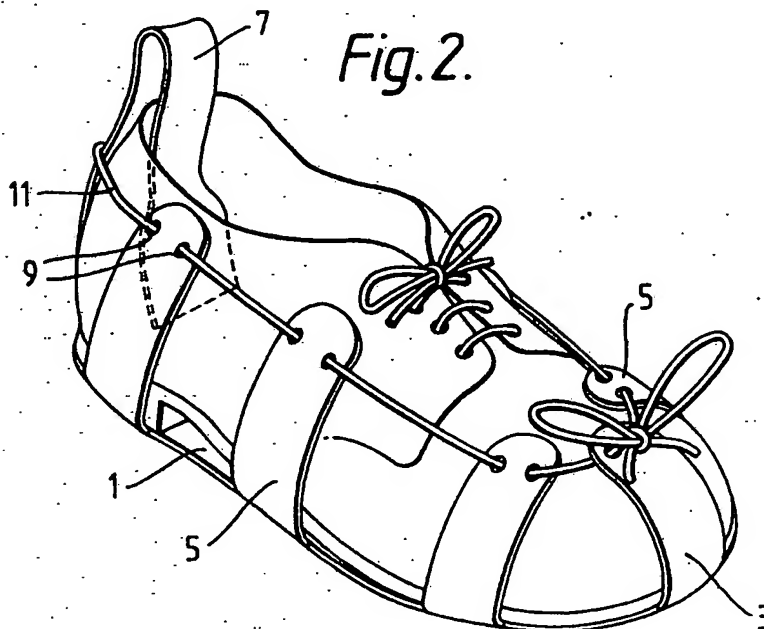
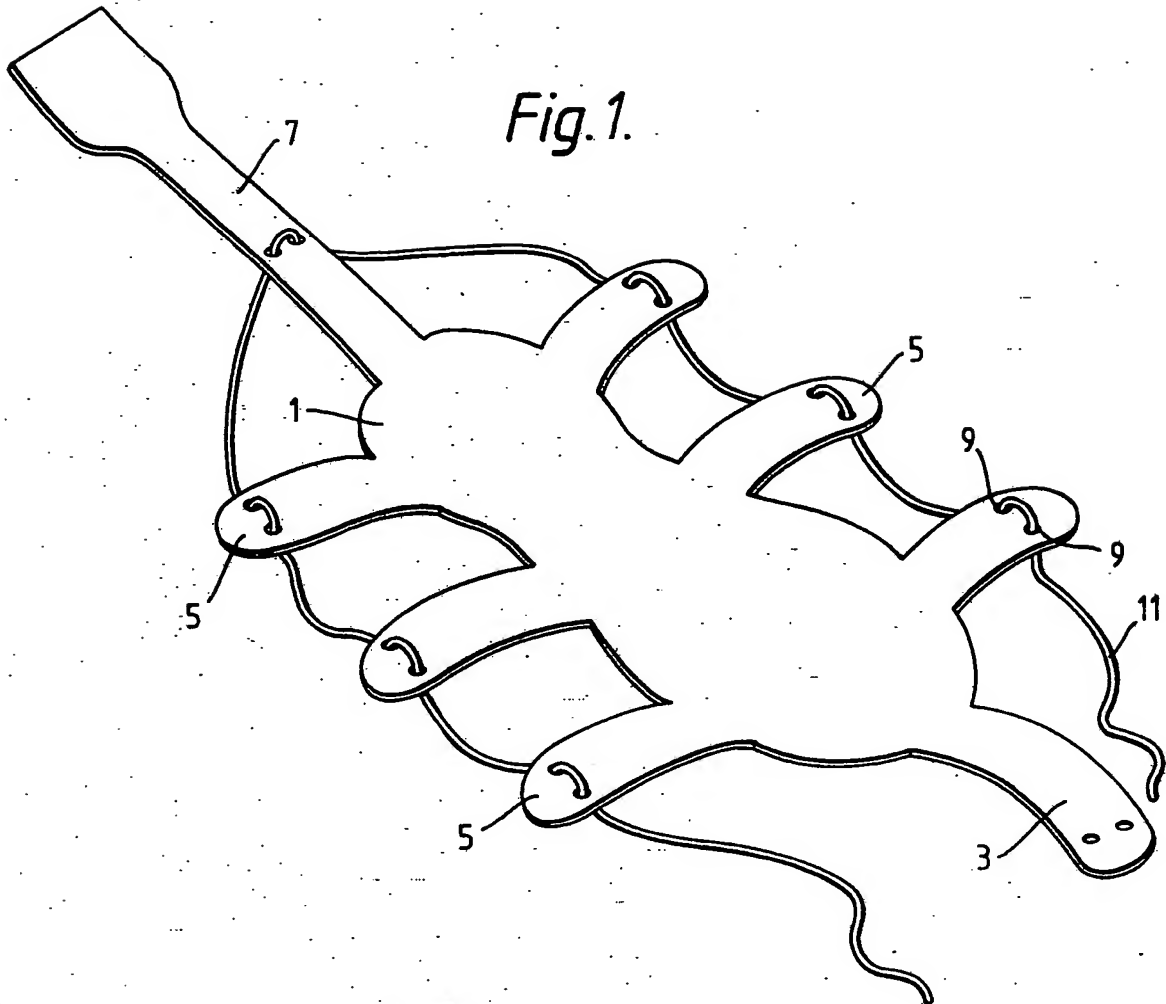
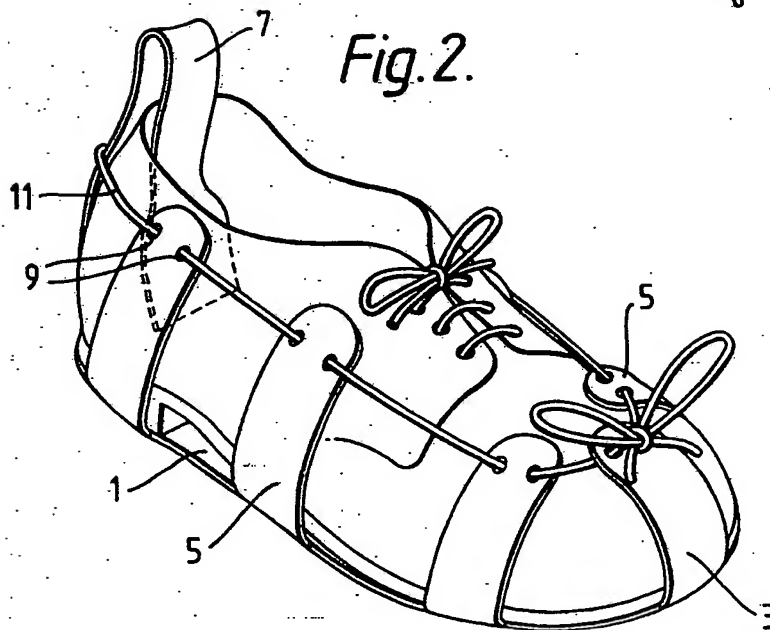


Fig.1.*Fig.2.*

"OVERSHOE"

This invention relates generally to overshoes.

Overshoes are commonly used for protecting or supplementing the normal type of shoe in order to obviate the need to carry and/or change into a spare pair or special pair of shoes. For instance, galoshes have been used for many years to provide additional rain protection. Overshoes are also used in other applications, for example in places where it is necessary to avoid the build-up of static and subsequent sparking e.g. where fuel or explosives are being handled or, in the micro-electronics industry, it is necessary for the bodies of people in those places to be earthed and they are therefore required to wear either electrically conductive overshoes or special conducting shoes. In the case of electrically conductive overshoes, in order to obtain a good electrical connection between the body and the overshoe an electrically conductive tongue may be provided on the overshoe which is, in use, retained against the wearer's body. Other types of overshoes are also used for other purposes e.g. when it is necessary for a person to be insulated from the floor an insulating overshoe can be used, or if extra grip is required an overshoe can be used which is provided with spikes or a heavily treaded sole may be slipped over a person's normal shoe.

However, all of these prior types of overshoe have the disadvantage that many sizes are needed to cover the whole range of shoe and boot size.

The present invention therefore provides an overshoe comprising a sole part, a plurality of straps each having a first free end and a second end attached to the sole part, and means for engaging at least some of the
5 straps at locations remote from said second ends for retaining the overshoe on a shoe.

Preferably there is an equal number of straps, for instance three straps, attached to each side, there may also be a toe and a heel strap. The connecting means may
10 be a draw-string or strap for, in use, drawing the straps up around the shoe to retain the overshoe on the shoe.

The sole part may include a backing sheet formed integrally therewith. Alternatively the sole part may comprise a sole which is bonded to a backing sheet to which
15 the straps are attached or with which the straps are integrally formed.

In a specific embodiment the sole part is electrically conductive and electrically connected to an electrically conductive tongue which, in use is retained
20 against the wearer's body or overlying clothing so that any electrical charge which builds up on the wearer may be discharged to earth. Conveniently the electrically conductive tongue forms an extension of a heel strap. The entire shoe may be made from an electrically conductive
25 material, for instance a sheet of carbon-containing polymer or natural rubber or oil resistant polymer. Alternatively if the entire shoe is made from a single sheet of material

the outer surface of the overshoe may be coated with an electrically conductive material. In alternative embodiments the invention may be used to provide an overshoe for use in different ways e.g. the underside of the sole part may be provided with spikes, a tread pattern or a non slip material to give a wearer additional grip, and/or the overshoe may be made to be electrically insulating for use in areas where a person has to be insulated from the floor.

10 The invention will be further described by way of non-limitative example with reference to the accompanying drawings, in which:-

Figure 1 shows an embodiment of the present invention; and

15 Figure 2 shows the embodiment of Figure 1 fitted to a shoe.

Figures 1 and 2 show an embodiment of the invention to be used as an electrically conductive overshoe. Referring to Figure 1, the overshoe comprises a sole part 1 and several straps 3, 5 and 7 each having a first free end and a second end connected to the sole part 1. In this embodiment there are three straps 5 along each side of the sole, one strap 3 at the toe and a heel strap 7. Each of the straps is provided with two holes 9 spaced from the second end where the strap and sole part join; and a draw-string 11 is threaded through the holes 9. The overshoe may be fitted to a shoe as shown in Figure 2 by

placing the shoe on the sole part and drawing the draw-string tight to pull the straps up over the side of the shoe, and then fastening the draw-string, e.g. by knotting at or near the toe strap. In an alternative
5 embodiment, the drawstring can be replaced by a strap passing through loops in the end of each of the straps 3, 5 and 7.

In this embodiment, which is for use as an electrically conductive overshoe, it is necessary that the
10 sole 1, or part of it, is electrically conductive. This is achieved in this embodiment by cutting or stamping the whole overshoe i.e. sole part and straps from a sheet of carbon-loaded polymer which is therefore electrically conductive. Other materials are also suitable, for
15 instance: natural rubber or an oil resistant polymer but these, again, must be carbon loaded. Alternatively, it is possible for the ground-engaging side only of the overshoe to be conductive e.g. by applying a conductive substance to one side of the sheet, that side then forming the ground
20 engaging side, before or after the shoe is cut out.

In order that the body of the wearer is electrically connected to the conductive part of the overshoe, the heel strap 7 is extended beyond the holes 9
to form a tongue which in use, and as can be seen in Figure
25 2, is folded over and tucked into the shoe. This arrangement allows sufficient electrical contact between the wearer's body and the electrically conductive sole,

even if the wearer is wearing socks. The arrangement also has the advantage that if the overshoe is made, as described above, by applying a conductive substance to the ground-engaging side only, it is this conductive side which is in contact with the wearer's body or overlying clothing when the tongue is tucked into the shoe.

If additional strengthening is required for the overshoe, then it is possible for the substance from which the shoe is made to be textile reinforced.

In the above embodiment, the entire overshoe was cut from a single sheet of material. However, in alternative embodiments the overshoe may be moulded - thus allowing the sole to be made thicker than the rest of the overshoe and also allowing it to have a tread pattern impressed on it. Alternatively the sole part may comprise a separate sole which is bonded to the outside of a backing sheet to which is attached the straps and conductive heel tongue; this attachment may be achieved simply by stamping or cutting the backing sheet and straps from a sheet of material. If the latter arrangement is employed, it is, of course, necessary for the extended heel tongue to be electrically connected to the outer sole part; this may be achieved by using conductive adhesives to bond the sole to the backing sheet.

The invention has been described above with reference to an embodiment for use as a conductive overshoe, however the invention is also applicable to a

number of other types of overshoe. For instance, it may be desirable for a person to be insulated from the floor and in this case an overshoe may be made from insulating materials, rather than electrically conductive ones. As a
5 further example, the invention may be applied to an overshoe which is used to give additional slip-resistance, for example by providing the sole part with a heavy tread or spikes, or forming the overshoe (or in the case that a separate sole part is bonded to a backing sheet, the
10 separate sole part) from a material which gives a high slip resistance. Alternatively a non-slip material may be applied to the underside of the sole.

With any of the above examples, it may be desirable to colour code or mark the overshoe - to show its
15 particular function e.g. electrically conductive or insulating, and, advantageously, bright colouring is used to make it easy to tell that a person is wearing an overshoe, and wearing the correct type of overshoe for the environment which he is in.

20 With the construction of the invention, it is possible for the whole range of shoe and boot sizes to be covered with just two sizes of overshoe. The overshoe according to the invention may also be quickly and easily fitted to a variety of shoe and boot types, thus allowing
25 temporary workers, or parties of visitors for instance, safe access to an area without the need to provide a large variety of sizes of special shoe.

The invention also allows the overshoe to be made by an easier and cheaper process than prior types of overshoe.

C L A I M S

1. An overshoe comprising a sole part, a plurality of straps each having a first free end and a second end attached to the sole part and means for engaging at least some of the straps at locations remote from said
5 second ends for retaining the overshoe on a shoe.

2. An overshoe according to claim 1 wherein there are an equal number of straps attached to each side of the sole part.

3. An overshoe according to claim 1 or 2 wherein
10 the plurality of straps include a toe strap and a heel strap.

4. An overshoe according to any preceding claim wherein the sole part comprises a sole bonded to a backing sheet to which the plurality of straps are attached.

15 5. An overshoe according to claim 4 wherein the backing sheet and plurality of straps are formed as integral parts.

6. An overshoe according to any one of claims 1 to 3 wherein the sole part and straps are formed as
20 integral parts.

7. An overshoe according to claim 6 wherein the sole part and straps are stamped from a sheet of material.

8. An overshoe according to claim 7 wherein the sheet of material is reinforced with a textile fabric.

25 9. An overshoe according to claim 5, 6, 7 or 8 wherein the outer surface of the overshoe is coated with an electrically conductive material.

10. An overshoe according to claim 5, 6, 7 or 8 wherein the sole part and straps are formed from an electrically conductive material.

5 11. An overshoe according to any preceding claim wherein the sole part is electrically conductive and is electrically connected to an electrically conductive tongue which, in use, is against the wearer's body or overlying clothing.

10 12. An overshoe according to claim 11 wherein the electrically conductive tongue is an extension of at least one said strap.

13. An overshoe according to claim 12 wherein the electrically conductive tongue is an extension of a heel strap.

15 14. An overshoe according to any preceding claim formed from carbon loaded polymer or carbon loaded natural rubber.

15. An overshoe according to any one of claims 1 to 8 constructed of electrically insulating materials.

20 16. An overshoe according to any one of the preceding claims wherein the underside of the sole part is provided with a tread pattern.

17. An overshoe according to any one of claims 1 to 8 wherein the underside of the sole part is provided
25 with spikes.

18. An overshoe according to any one of claims 1 to 8 wherein the underside of the sole part comprises a non-slip material.

19. An overshoe substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.